

CLAIMS

What is claimed is:

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1. A method for powder coating articles comprising the steps of:
preheating the article to a preheating temperature;
coating the article with a polymeric powder coating, the polymeric powder coating having a cross-linking temperature that is above the preheating temperature;
and

curing the article having the powder coating applied thereto at a curing temperature, the curing temperature being between the powder coating cross-linking temperature and the melting point temperature of the articles.

2. The method for powder coating in accordance with claim 1 including the step of drying the article at a temperature below a melting point temperature of the article prior to preheating the article.

3. The method for powder coating in accordance with claim 1 including the step of cleaning the article to remove contamination with a wash solution prior to preheating the article.

4. The method for powder coating in accordance with claim 3 including the step of drying the article to remove any remaining wash solution.

5. The method for powder coating in accordance with claim 1 including the step of cooling the coated article subsequent to curing the article.

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6. The method for powder coating in accordance with claim 1 including the step of applying a second coat of polymeric powder coating on the article, the second coat of polymeric powder coating having a cross-linking temperature and being applied over the first coating of the powder coating after curing thereof, the second coat of polymeric coating being applied over the first coat of powder coating at a temperature below the cross-linking temperature of the second coat of polymeric powder coating; and curing the article having the second coat of powder coating applied thereto at a curing temperature, the curing temperature of the second coat

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A₂ ~~being between the cross-linking temperature of the second coat of powder coating and the melting point temperature of the article.~~

7. The method for powder coating in accordance with claim 6 including the step of preheating the article to a second preheating temperature, the second preheating temperature being below the cross-linking temperature of the second coat of polymeric powder coating.

8. The method for powder coating in accordance with claim 6 including the step of drying the article at a temperature below a melting point temperature of the article prior to preheating the article.

9. The method for powder coating in accordance with claim 6 including the step of cleaning the article to remove contamination with a wash solution prior to preheating the article.

10. The method for powder coating in accordance with claim 9 including the step of drying the article to remove any remaining wash solution.

11. The method for powder coating in accordance with claim 6 including the step of cooling the coated article subsequent to curing the article.

12. The method for powder coating in accordance with claim 1 wherein the coating step includes spraying the powder coating material from an electrically charged device.

13. The method for powder coating in accordance with claim 12 wherein the electrically charged device is an electrostatic spray gun.

14. The method for powder coating in accordance with claim 1 wherein the article is non-grounded during the coating step.

15. The method for powder coating in accordance with claim 1 wherein the preheating temperature is about 220°F to about 250°F and the powder coating is a

carboxyl polyester resin based material having a cross-linking temperature greater than about 250°F, and wherein the article is cured at a temperature of about 400°F.

16. The method for powder coating in accordance with claim 15 including the steps of: applying a second coat of polymeric powder coating on the article, the second coat of polymeric powder coating being a carboxyl polyester resin based material having a cross-linking temperature great than about 250°F, the second coat of resin being applied over the cured first coating and being applied at a temperature less than about 250°F; and curing the article having the second coat of resin at a temperature of about 400°F.

17. The method for powder coating in accordance with claim 1 including the step of supporting the article without regard as to electrically grounding the article.

18. A method for powder coating articles comprising the steps of:
preheating the article to a preheating temperature below a melting point temperature of the article;
coating the article with a first polymeric powder coating, the first polymeric powder coating having a first cross-linking temperature that is above the preheating temperature;
curing the article having the first powder coating applied thereto at a first curing temperature, the first curing temperature being between the first powder coating cross-linking temperature and the melting point temperature of the articles;
coating the article with a second coat of polymeric powder coating over the cured first coating, the second coat of polymeric powder coating having a second cross-linking temperature, the second coat of polymeric coating being applied over the first coat of powder coating at a temperature below the second cross-linking temperature; and
curing the article having the second coat of powder coating applied thereto at a second curing temperature, the second curing temperature being between the second cross-linking temperature and the melting point temperature of the article.

19. The method for powder coating in accordance with claim 18 including the step of supporting the article without regard as to electrically grounding the article.

20. A powder coated article produced in accordance with the method of claim 1.

21. A powder coated, non-conductive article produced in accordance with the method of claim 1.

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